

Claimed are:

1. An assay result reading device for reading the result of an assay performed using a test strip, the device comprising:
 - at least one light source capable of emitting light incident upon at least two spatially separated zones of the test strip; and
 - a photodetector which detects light emanating from each of the two said zones.
2. A reading device according to claim 1, further comprising a second photodetector, wherein both photodetectors are so positioned as to detect at least a portion of the light emanating from at least one of the zones of the test strip.
3. A reading device according to claim 2, wherein the two photodetectors are positioned on opposite sides of the at least one zone and laterally offset from the at least one zone.
4. A reading device according to claim 1, wherein the at least one light source comprises three light sources.
5. A reading device according to claim 1, wherein the at least one light source comprises a light emitting diode (LED).
6. A reading device according to claim 1, wherein the photodetector comprises a photodiode.
7. A reading device according to claim 1, wherein the photodetector is positioned between the spatially separated zones and laterally offset from the zones.

8. A reading device according to claim 1, further comprising a second photodetector and wherein:
 - the test strip has three spatially separated zones;
 - the at least one light source comprises three LED's;
 - each LED is aligned with and laterally offset from a corresponding test strip zone;
 - a first baffle is so sized and positioned as to prevent light emitted by the first LED from illuminating the third zone;
 - a second baffle is so sized and positioned as to prevent light emitted by the third LED from illuminating the first zone;
 - the first photodetector is so positioned as to receive light emanating from the first zone and the second zone; and
 - the second photodetector is so positioned as to receive light emanating from the second zone and the third zone.
9. A reading device according to claim 1, further comprising a housing enclosing the at least one light source and the photodetector.
10. A reading device according to claim 9, wherein the housing is no larger than about 12 cm long, about 2.5 cm wide, and about 2.2 cm tall.
11. A reading device according to claim 1, wherein the at least one light source and the photodetector are disposed within an area no larger than about 1 square centimeter.
12. A reading device according to claim 1, wherein the at least one light source and the photodetector are disposed within an area no larger than about 0.7 square centimeter.

13. A reading device according to claim 1, further comprising:
a computation circuit responsive to signals generated by the photodetector
representing the presence or absence of a fluid sample in at least one of the zones
to:
calculate a flow rate for a fluid flowing along the test strip;
compare the calculated flow rate to upper and lower limits; and
reject the assay result if the calculated flow rate is outside the upper and
lower limits.
14. A reading device according to claim 1, further comprising:
a computation circuit, responsive to an input signal representing the amount of an
analyte or the rate of accumulation of an analyte in at least one of the zones of the
test strip, to:
compare the input signal to a first threshold;
compare the input signal to a second threshold, the second threshold being
less than the first threshold;
generate an output signal if the input signal exceeds the first threshold or
the input signal is less than the second threshold, the output signal
indicative of a first result if the input signal exceeds the first
threshold, or, alternatively, the output signal indicative of a second
result if the input signal is less than the second threshold; and
terminate the assay if the input signal exceeds the first threshold or the
signal is less than the second threshold.
15. A reading device according to claim 14, further comprising:
a computation circuit responsive to signals generated by the photodetector
representing the presence or absence of a fluid sample in at least one of the zones
to:
calculate a flow rate for a fluid flowing along the test strip;

compare the calculated flow rate to upper and lower limits; and
reject the assay result if the calculated flow rate is outside the upper and
lower limits.

16. An assay result reading device for reading the result of an assay performed using a test strip, the device comprising:
 - at least one light source capable of emitting light incident upon at least one zone of the test strip; and
 - at least two photodetectors, each of which detects light emanating from the at least one zone of the test strip.
17. A method of determining the result of an assay performed using a test strip, the method comprising:
 - positioning the test strip in relation to an assay result reader, the reader comprising a housing enclosing at least one light source and a photodetector; and
 - measuring a light level received by the photodetector;
 - wherein the test strip is so positioned that the at least one light source emits light incident on at least two spatially separated zones of the test strip, and so that light emanating from at least one of the zones is incident on the photodetector.
18. A method according to claim 17, wherein the test strip is positioned at least partly inside the assay result reader.
19. A method according to claim 17, wherein the assay result reader further comprises a second photodetector, the at least one light source comprises first, second, and third light sources, the test strip has three spatially separated zones, and wherein:

each light source is aligned with and laterally offset from a corresponding test strip zone;
the first photodetector is so positioned as to receive light emanating from the first zone and the second zone; and
the second photodetector is so positioned as to receive light emanating from the second zone and the third zone.

20. A method of determining the result of an assay performed using a test strip, the method comprising:
positioning the test strip in relation to an assay result reader, the reader comprising a housing enclosing at least one light source and at least two photodetectors; and
measuring a light level received by the photodetector;
wherein the test strip is so positioned that the at least one light source emits light incident on the at least one zone of the test strip, and so that light emanating from the at least one zone is incident on each photodetector.